

**Remarks**

Claims 1, 3, 4, 6-8, 10 and 22 are pending in the present application. Reconsideration is respectfully requested.

At the outset, the Office Action dated August 31, 2010, is a final Office Action and contains one rejection (discussed below). The remaining rejection is a new rejection. The Examiner indicated at page 2 of the Office Action that the rejection was necessitated by claim amendments. Claim 1 was amended in the Amendment, filed on June 10, 2010, by incorporating claims 5 and 9 therein. Claims 5 and 9 were pending and examined as indicated in the prior Office Action dated March 29, 2010. As a result, it is not seen how the prior amendments necessitated this new ground of rejection. Accordingly, Applicants respectfully request withdrawal of the finality of the Office Action dated August 31, 2010.

At page 2 of the Office Action, the Examiner rejected claims 1, 3, 4, 6-8, 10 and 22 under 35 USC § 103 as being unpatentable over Niemi in view of Masters and further in view of Venables and FR 2625676 ("FR '676").

The Examiner's position is essentially that Niemi teaches a high water dentifrice composition comprising a silica abrasive and a silica thickener, but fails to disclose the microcrystalline cellulose ("MCC") and the claimed viscosities (see the Office Action at page 3). The Examiner cites Masters for disclosing a silica dentifrice comprising MCC (to reduce stringiness) and argues that modification to obtain the claimed viscosities would have been obvious since Niemi teaches binders as gelling agents and viscosity modifying agents.<sup>1</sup> The Examiner indicates that Niemi and Masters fail to disclose the claimed amount of MCC, but

---

<sup>1</sup> At page 4 of the Office Action, the Examiner parenthetically states that the MCC is known in the art as an abrasive and gelling agent without any support for such positions. Indeed, FR '676 teaches that Avicel pH 105 works because it "does not gel" (see page 1, bottom). The Examiner is respectfully requested to clarify these points in the Office Action if this rejection is maintained.

relies on Venables to cure this deficiency. Finally, the Examiner relies on FR '676 as suggesting the use of non-colloidal MCC in the teachings of Niemi and Masters to obtain less abrasive with better cleaning properties. Therefore, the Examiner concludes the present invention is a mere optimization of the workable amounts of the silica abrasive/thickener and claimed viscosities based on the combination of references.

Applicants respectfully traverse the foregoing rejection and respectfully request reconsideration thereof. There is no disclosure or suggestion in the combination of references that one could obtain a stable high water toothpaste with a reasonable expectation of success: (1) containing both a silica abrasive in an amount less than 15% and a silica thickener in an amount of 1 to 7%; (2) containing MCC to assist in reducing abrasivity; and (3) having a viscosity in an amount less than 200,000 cP. Indeed, Niemi specifically teaches that the stability of high water toothpaste systems is unpredictable and further teaches away from the present invention.

That is, Niemi is directed to specific high water dentifrice compositions having a viscosity greater than 200,000 cP, a silica abrasive in an amount of 8-18%, and a silica thickener in an amount of 8-15%. The specific composition is disclosed by Niemi to provide a high water dentifrice that has acceptable stability, mouthfeel and rheological properties (see the Abstract) that overcomes the problems in the art associated with high water dentifrices. Niemi teaches that the toothpaste composition disclosed therein must have a viscosity greater than 200,000 cP. Nothing in the remaining references teaches or suggests that the presently claimed high water toothpaste composition having a viscosity less than 200,000 cP could be stable (and have reduced abrasivity).

First, Applicants respectfully submit that the level of skill in the field of high water silica toothpastes is, contrary to the Examiner's position, unpredictable and that one skilled in

the art would not have known, with a reasonable expectation of success, that modifying the amounts of the silica abrasive and silica thickener disclosed in Niemi and Masters, in combination with a lower viscosity, could lead to the stable high water toothpaste of the present invention having reduced abrasivity. For example, Niemi teaches:

Given the economics involved, the dentifrice compositions ideally would contain as high a water fraction as possible without sacrificing the needed performance and aesthetics. Nonetheless, the notion of significantly increasing the water content per se of a dentifrice raises concerns of undermining, for example, the stability and uniformity of the dentifrice formulation, its ability to retain its body and shape without experiencing inordinate sagging when extruded upon toothbrush bristles in order to sufficiently sit on the bristles, or the tendency of the formulation not to readily seep out of the dispenser tube when opened. In practice, merely increasing the water content in conventional dentifrice formulations, all other things kept equal, has been observed to have a deleterious impact on stability, mouthfeel and rheological properties.

See col. 1, lines 44-58. Emphasis added.

Niemi is clearly teaching that the stability of high water toothpaste systems is unpredictable and formulation specific. As a result, Niemi teaches that one skilled in the art would not have known what to expect by varying the components and amounts in a given high water toothpaste composition. There is no suggestion in any of the references that one could modify the references and obtain the stable toothpaste formulation of the present invention having reduced abrasivity and lower viscosity.

Second, since Niemi teaches that merely increasing water content has been observed to have a deleterious impact on stability, mouthfeel and rheological properties and solves such problems by a very specific formulation having a viscosity of greater than 200,000 cP, Niemi supports the unexpected nature of the present invention and teaches away from the present invention.

Nothing in Masters, Venables, or FR '676 teaches that one skilled in the art could indeed modify Niemi with a reasonable expectation of success to: (i) reduce the amount of silica thickener (ii) in a high water system and (iii) obtain a stable toothpaste despite having a viscosity less than 200,000 cP.

Masters discloses a silica toothpaste composition having 15-30 wt% silica abrasive and the use of MCC to reduce stringiness in such a composition. As a result, similar to Niemi, Masters also fails to disclose both a silica abrasive in an amount of less than 15% and silica thickener in an amount of 1 to 7%. Neither Niemi nor Masters suggest that the amounts of the silica abrasive and silica thickener are interchangeable with other formulations. Further, there is no suggestion in Masters that MCC should or could be used (to reduce stringiness) in formulations other than those disclosed in Masters.

Moreover, Masters does not teach anything about the viscosity of the toothpaste composition. As a result, nothing in Masters suggests that a stable, high water toothpaste, containing less silica abrasive and thickener could be obtained having a viscosity less than 200,000 cP. If one were to combine Niemi and Masters, one skilled in the field would not have been motivated with a reasonable expectation of success to develop a stable, high water toothpaste as claimed having a viscosity less than 200,000 cP given the express teachings in Niemi.

Venables is directed to ultra-fine MCC compositions containing an attriting aid. The attriting aid is preferably a multifunctional component and serves to grind the MCC during processing to assist in size reduction and also serves the additional function of contributing a desired component or property to the product in which the MCC is utilized. Such additional functions of the attriting aid are described as being an abrasive in personal hygiene products such as toothpastes (see col. 4, lines 60-67). While Venables describes the general utility of

the products described therein as a stabilizer, there is no disclosure of their specific use in high moisture toothpastes having viscosities less than 200,000 cP. Since Niemi teaches the unpredictability in the field of high water toothpastes and specifically teaches away from high water toothpastes having viscosity less than 200,000 cP, one skilled in the art would not have been motivated with a reasonable expectation of success to modify Niemi and develop a stable, high water toothpaste as claimed having a viscosity less than 200,000 cP.

Finally, FR '676 is directed to solving the problem of abrasive dentifrices, but fails to provide any guidance on high water toothpaste systems or their challenges. The reference also fails to provide any suggestion that one skilled in the art could modify the teachings of Niemi with a reasonable expectation of success and obtain a stable, high water toothpaste having reduced levels of silica abrasive and silica thickener in a composition having a viscosity less than 200,000 cP.

The Examiner's attention is directed to Examples 16, 17 and 18 in the present application demonstrating the stability and acceptable Cuban values obtained by the high water dentifrice composition of the present invention. Since Niemi teaches high water toothpaste systems having a viscosity greater than 200,000 cP is required, the presently claimed stable toothpaste composition having a viscosity less than 200,000 cP is unexpected.

The Examiner argues at page 4 that one skilled in the art would have been motivated to mix and match the teachings in the references so as to arrive at the presently claimed high water toothpaste (having reduced abrasivity) having a viscosity less than 200,000 cP, since Niemi teaches that the use of binders are known in the art as gelling agents. However, Applicants point out that Niemi expressly requires a viscosity greater than 200,000 cP. As a result, contrary to the Examiner's reading of Niemi, Niemi does not suggest the use of such

binders in a high water toothpaste (having reduced abrasivity) having a viscosity less than 200,000 cP.

In summary, since Niemi teaches that the stability of high water toothpaste systems is unpredictable and further expressly teaches not to use a toothpaste system having a viscosity less than 200,000 cP, one skilled in the art would not have believed from the combination of references that Niemi could have been modified as suggested by the Examiner with a reasonable expectation of success to obtain a stable, high water toothpaste (having reduced abrasivity) having a viscosity less than 200,000 cP. In view of the foregoing, it is respectfully submitted that the presently claimed invention is unobvious and patentable over the cited art. Accordingly, withdrawal of the foregoing rejection is respectfully submitted.

Early, favorable action is earnestly solicited.

Respectfully submitted,

November 16, 2010

/Paul A. Fair, Reg. No. 35,866/  
Paul A. Fair, Esq.  
Reg. No. 35,866  
Phone: (215) 299-6723

Please send all correspondence to:  
Patent Administrator  
FMC Corporation  
1735 Market Street  
Philadelphia, PA 19103